Supreme Court, U.S.
FILED

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No.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1998

DAVID S. COLVIN,

Petitioner,

vs.

NATIONAL AUTOMOTIVE PARTS ASSOCIATION, *et al.*,

Respondents.

ON PETITION FOR WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

PETITION FOR WRIT OF CERTIORARI

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QUESTION PRESENTED

Whether *Graham v. John Deere*'s requirement that courts consider "several basic factual inquiries" before determining obviousness is violated when obviousness summary judgment is entered contrary to the patent owner's evidence on the *Graham* facts?

PARTIES TO THE PROCEEDINGS

The parties to the proceedings below were the Petitioner David S. Colvin, and the Respondents National Automotive Parts Association, Danaher Corporation, Holo-Krome Technology Corporation, Matco Tools Technology Corporation, and Easco Hand Tools, Inc.

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Petitioner David S. Colvin respectfully requests that a writ of certiorari issue to review the judgment and opinion of the United States Court of Appeals for the Federal Circuit, entered in the above-entitled proceeding on August 18, 1998 (1a-2a), and on which a timely filed petition for rehearing was denied on September 25, 1998 (35a).

OPINIONS BELOW

The Opinion of the Court of Appeals for the Federal Circuit, dated August 18, 1998, is unreported. It is reprinted in the Appendix A hereto, pages 1a-2a.

The Order containing the memorandum decision of the United States District Court for the Eastern District of Michigan (DeMascio, D.J.), dated October 28, 1997, has not been reported. It is reprinted in the Appendix B hereto, pages 3a-13a.

The Opinion of the Court of Appeals for the Federal Circuit, dated May 22, 1996, is not reported. It is reprinted in the Appendix C hereto, pages 14a-15a.

The Order containing the memorandum decision of the United States District Court for the Eastern District of Michigan (DeMascio, D.J.), dated July 5, 1995, has not been reported. It is reprinted in the Appendix D hereto, pages 16a-34a.

STATEMENT OF JURISDICTION

Petitioner brought this patent infringement suit under 28 U.S.C. § 1338(a) in the Eastern District of Michigan on April 30, 1993. The district court entered summary judgment of invalidity, *sua sponte*, and Petitioner appealed to the Federal Circuit, pursuant to 28 U.S.C. § 1295. The Federal Circuit

affirmed on August 18, 1998, a timely petition for rehearing was filed on September 1, 1998, and the petition for rehearing was denied on September 25, 1998.

The jurisdiction of this Court to review the judgment of the Federal Circuit is invoked under 28 U.S.C. § 1254(1).

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

U.S. Const., Amdt. 7

> In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to rules of the common law.

35 U.S.C. § 103(a). Conditions for patentability; nonobvious subject matter

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

SUMMARY

This Court mandated in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966) that the obviousness or nonobviousness of a patent can be determined only after conducting "several basic factual inquiries", into, *inter alia*, the "differences between the prior art and the claims at issue" and the actual "circumstances surrounding the origin of the subject matter" invented. In this case, the Federal Circuit affirmed the district court's *sua sponte* summary judgment that Petitioner's patent (the "Colvin patent") was "obvious" in view of a prior art patent (the "Dossier patent") that the U.S. Patent and Trademark Office considered before allowing the Colvin patent.

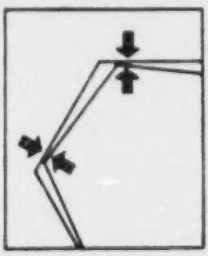
Petitioner, following *Graham*, offered extensive evidence on the *Graham* factors. Neither the Federal Circuit nor the district court, however, determined "the differences between the prior art and the claims at issue," as required by *Graham*.

Nor did either consider Petitioner's evidence of the actual circumstances at the time of Petitioner's invention: (1) Respondents had to convene a special committee of engineers to try to solve the "trivial" problem Petitioner solved, (2) Respondents engineers did **not** arrive at Petitioner's "obvious" solution and instead first tried their own design which failed, (3) Respondents adopted Petitioner's design after his patent issued and their design failed, and (4) Respondents now admittedly manufacture one million wrenches per day with the "obvious" Colvin design they could not achieve on their own.

The lower courts' summary judgment decisions conflict with *Graham*, violate Petitioner's Seventh Amendment right to a jury trial on the *Graham* inquiries, and raise questions fundamental to nearly all patent cases, where plaintiffs' jury demands and defendants' obviousness defenses are routine.

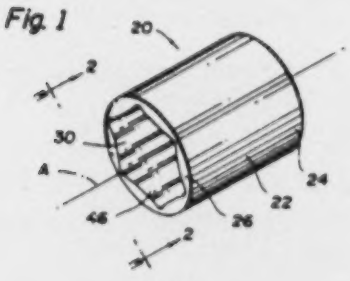
STATEMENT OF THE CASE

This case concerns David S. Colvin's U.S. Patent No. 4,930,378 ("the Colvin patent"). Petitioner is an individual inventor of 15 wrench patents, including one that Respondents previously licensed. The Colvin patent solved the age-old problem of "corner rounding," where wrenches round-off the corners of fasteners during use. The sales literature of Respondents Danaher Corporation and Easco Hand Tools, Inc. reproduced below illustrates the corner rounding problem solved by the Colvin patent.



Ordinary sockets contact the fastener at its corners. In high torque situations, this can lead to a rounding of the fastener and socket slippage.

The Colvin patent solved the corner rounding problem through a unique combination of flat and curved surfaces. The Colvin patent claims two distinct wrench openings — a "six-point" wrench and a "twelve-point" wrench, as shown below.



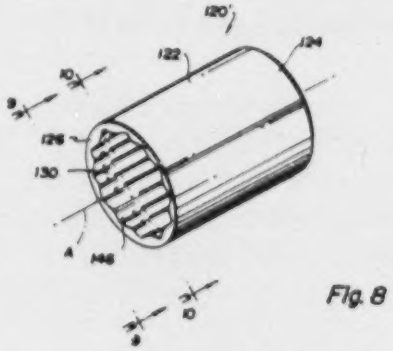
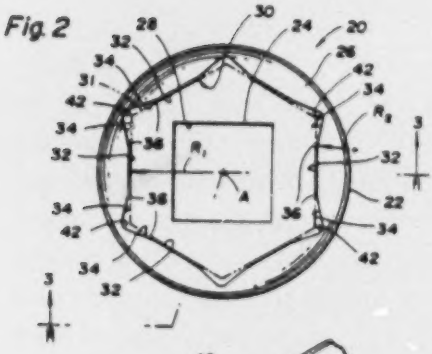


Fig. 8



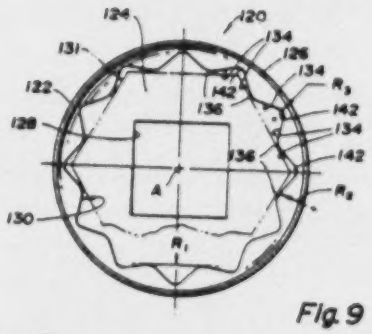
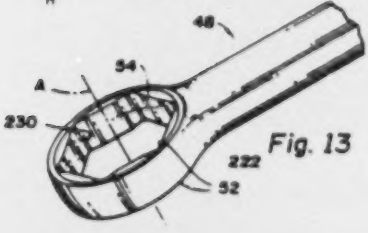
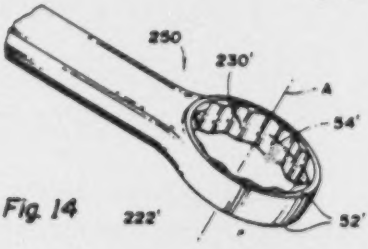


Fig. 9





SIX-POINT
SOCKET & WRENCH

TWELVE-POINT
SOCKET & WRENCH

Petitioner filed the application for the Colvin patent on April 22, 1988, and the patent issued on June 5, 1990. Before allowing the Colvin patent, the U.S. Patent and Trademark Office ("PTO") considered the Dossier patent (prior art U.S. Patent No. 4,581,957, issued to Dossier) at the center of the district court and Federal Circuit decisions in this case.

After Petitioner's patent issued, Respondents began selling the infringing (admitted by Respondents' counsel for the purpose of summary judgment) product. The dimensions of the infringing wrench opening are identical to Figure 4 of the '378 patent. These facts create the inference, to which Colvin was entitled on summary judgment, of copying.

On May 10, 1994, Petitioner moved for summary judgment of infringement, and Respondents moved for summary judgment of non-infringement and invalidity based on an alleged prior art "Moore" wrench. The district court denied both motions.[1] (26a.) However, although Respondents did not raise invalidity in view of the Dossier patent, the district court, *sua sponte*, entered summary judgment that the Colvin patent is "obvious" in view of the Dossier patent and therefore invalid under 35 U.S.C. § 103.[2] (28a-33a.) Because Petitioner had no opportunity to be heard before the district court's July 5, 1995 *sua sponte* obviousness determination, the Federal Circuit vacated and remanded in a May 22, 1996 decision. (15a.)

On remand the district court allowed Petitioner to supplement the evidentiary record regarding the Dossier patent.

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1. The district court found genuine issues of material fact on infringement and that the "Moore" wrench was not prior art and therefore could not invalidate the Colvin patent. (28a.)

2. 35 U.S.C. § 103 is reproduced on page 2.

Petitioner presented the following evidence showing that the Colvin patent was not obvious in view of the Dossier patent:

1. *35 U.S.C. § 282 presumption of validity.* The PTO considered the Dossier patent (discussed in the Colvin patent itself) and did not find the Petitioner's invention obvious in view of the Dossier patent.

2. *Primary declaration evidence of nonobviousness.* Petitioner submitted the Declarations of Michael Bodner, former Director of Product Development for Respondent Easco Hand Tools, Inc., Gene Olson, retired Chief Engineer of Snap-On Tools and inventor of numerous wrench patents, and Harold Josephs, Director of the Fastener Research Center at Lawrence Technological University. Each testified from his personal experience relating to the teachings of Dossier, the differences between the invention and Dossier, and other facts pointing to nonobviousness.

3. *Objective evidence of nonobviousness from the marketplace.* Petitioner also presented documentary and deposition evidence that at the time Petitioner invented his solution to the corner-rounding problem, Respondents had tremendous commercial incentive to solve the same problem, and did not find the problem trivial nor Petitioner's solution obvious:

   - In June 1988, two months after Petitioner filed his application for the Colvin patent, Respondents convened a special committee, the "Flank Drive Committee," to solve the long-standing corner rounding problem.

   - Respondents' engineers had every incentive to find Petitioner's "obvious" solution.

> Respondents' counsel admitted that Petitioner's design is easy to manufacture and that Respondents are using it now to produce one million wrenches per day.

- Despite this incentive, Respondents' engineers did not adopt Petitioner's "obvious" solution. Instead they patented a dramatically different design that they could not commercialize.

- After Respondents' own design failed and the Colvin patent issued, Respondents adopted Petitioner's design.

On May 9, 1997, the district court allowed oral argument. At the outset of the oral argument, the district court emphasized the proceedings were limited to the Dossier patent:

> The Court: [To Petitioner's counsel.] Remember this isn't going to be a big blown up trial. This is for one specific purpose. I'm not going to let you take me down a criminal's [primrose] path as you have for the last two years. This is simply on Dossier, that's all I want to hear about. I've got my opinion out, I've got my judgment out. I'm not opening the record to let you go helter-skelter, is that clear. Do you understand that? All right.

On October 28, 1997, the district court re-entered his summary judgment of obviousness in view of Dossier.[3] (13a.) The Federal Circuit affirmed in an unpublished two paragraph opinion. (1a-2a.)

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3. The district court cited other prior art, but, consistent with his admonition during oral argument that "this is simply on Dossier," focused on Dossier in finding Petitioner's invention "obvious."

REASONS FOR GRANTING THE WRIT

I.

THE RIGHT TO A JURY TRIAL ON THE FACTUAL QUESTIONS MANDATED BY *GRAHAM* IS A PARAMOUNT ISSUE IN PATENT CASES, WHERE PLAINTIFFS ROUTINELY DEMAND JURIES AND DEFENDANTS ROUTINELY PLEAD OBVIOUSNESS.

This Court established the test for obviousness in *Graham*. While validity is ultimately a question of law, the obviousness or nonobviousness of an invention depends on several underlying "basic factual inquiries":

> While the ultimate question of patent validity is one of law, Great A. & P. Tea Co. v. Supermarket Equipment Corp., *supra*, 340 U.S. at 155, 71 S. Ct. at 131, the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.

> *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 86 S. Ct. 683, 694 (1966).

The *Graham* Court emphasized ". . . that strict observance of the requirements laid down here will result in that uniformity and definiteness which Congress called for in the 1952 Act." *Id.*

This Court reemphasized the jurisprudential significance of those factual inquiries in *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809, 106 S. Ct. 1578 (1986). The Court remanded to the Federal Circuit for ". . . the Federal Circuit's informed opinion on the complex issue of the degree to which the obviousness determination is one of fact." *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809, 811, 106 S. Ct. 1578, 1579 (1986). Chief Judge Markey, writing for the Federal Circuit, on remand from this Court, articulated the factual underpinnings of the legal determination of obviousness:

> A § 103 determination involves fact and law. There may be these facts: what a prior art patent as a whole discloses; what it in fact disclosed to workers in the art; what differences exist between the entire prior art, or a whole prior art structure, and the whole claimed invention; what the differences enabled the claimed subject matter as a whole to achieve; that others for years sought and failed to arrive at the claimed invention; that one of those others copied it; that the invention met on its merits with outstanding commercial success.
>
> *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566 (Fed. Cir. 1987).

Dennison underscored the importance of factual inquiries underlying the obviousness analysis. *Dennison* left unanswered,

however, the Seventh Amendment entitlement to trial by jury on those basic factual inquiries.

Just as this Court mandated in *Graham* that "strict observance of the requirements laid down here will result in that uniformity and definiteness which Congress called for in the 1952 Act," 383 U.S. at 17-18, Congress further attempted to unify patent law by creating the United State Court of Appeals for the Federal Circuit. H. Rep. 97-312, 97th Cong., 1st Sess. at 20-23 (1981). If the Federal Circuit does not follow *Graham*, however, chaos, rather than certainty, arises. If the obviousness question is unanchored by *Graham's* "several basic factual inquiries," it will turn merely on the whim of the trial judge's subjective belief whether the invention is obvious. As this Court stated nearly 175 years ago:

> Judicial power is never exercised for the purpose of giving effect to the will of the judge; always for the purpose of giving effect to the will of the legislature, or, in other words, to the will of the law.

Osborn v. Bank of The United States, 22 U.S. (9 Wheat.) 738, 866 (1824) (Marshall, C.J.).

This Court has previously granted certiorari to consider questions relating to the impact of the Seventh Amendment on patent trials. In *Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 117 S. Ct. 1040, 1053 (1997) and *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S. Ct. 1384, 1389 (1996), this Court reaffirmed that patent cases generally come within the scope of the Seventh Amendment's right to a trial by jury. In *American Airlines, Inc. v. Lockwood*, 515 U.S. 1121, 115 S. Ct. 2274 (1995), this Court granted certiorari to consider whether the Seventh Amendment applies

to declaratory judgment act claims to have the patent declared invalid.[4]

Defendants plead obviousness as a matter of course. Further, while patent cases were historically tried to the bench, jury demands have become routine in the past 25 years.[5]

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4. The question presented in *American Airlines* was:

> In an action in which the sole claim to be tried is a claim under the Declaratory Judgment Act to have a patent declared invalid, is there a right to a jury trial under the Seventh Amendment to the United States Constitution?

However, the petitioner American Airlines, Inc. withdrew its jury demand in the district court, and the question was mooted. *American Airlines, Inc. v. Lockwood*, 515 U.S. 1182, 116 S. Ct. 29 (1995).

5. In the fiscal years 1992-1994, 163 of 274 patent trials were tried to a jury. In fiscal year 1994, 70% of patent trials were tried to juries. 1994 Preliminary Annual Report of the Director of Administrative Office of the United States Courts, Table C-4 (available from the Administrative Office's Statistics Division); Annual Report of the Director of the Administrative Office.

II.

THE FEDERAL CIRCUIT AND THE DISTRICT COURT VIOLATED PETITIONER'S SEVENTH AMENDMENT RIGHT TO A JURY TRIAL AND THIS COURT'S MANDATE IN *GRAHAM* WHEN THEY FOUND PETITIONER'S PATENT CLAIMS INVALID WITHOUT CONDUCTING *GRAHAM'S* "SEVERAL BASIC FACTUAL INQUIRIES."

It is paramount that the Federal Circuit and district courts follow *Graham* and, in accordance with the Seventh Amendment, ensure that the "several basic factual inquiries" go to the jury in jury cases.

The lower courts' handling of Petitioner's "12-point" claims was most egregious. Half of the asserted claims of the Colvin patent are directed to the "twelve-point" wrench opening. (*See* page 5.) Every claim in an issued United States patent is presumed by statute to be valid. 35 U.S.C. § 282 ("Each claim of a patent . . . shall be presumed valid independently of the validity of the other claims.").

But neither the Federal Circuit nor the district court ascertained the "differences between the prior art and the [twelve-point] claims at issue" — as required by *Graham* — before reaching a conclusion on obviousness. Had either followed *Graham*, it would have found dramatic differences between Petitioner's "twelve-point" claims (claims 18, 19, 20 and 25) and the "twelve-point" wrench in the Dossier patent.

As shown on the following pages, the Dossier patent discloses a twelve-point wrench precisely the **opposite** of the twelve-point wrench in the Colvin patent. Where the Colvin wrench requires flat surfaces (blue-claim 18, clause 1), the Dossier wrench has curved surfaces (brown). Where the Colvin wrench has curved surfaces for driving the fastener (red-claim 18, clause 2), the Dossier wrench has a pointed "edge" that does not contact the fastener. Petitioner raised these differences to the district court

COLVIN PATENT - Claim 18

1. A wrench including a body defining a closed wrench opening that has a central axis and is of a nominal size for torquing a conventionally toleranced hexagonal fastener such as a nut or bolt head of the same nominal size, said wrench opening comprising: twelve pairs of flat surfaces having pointed shapes that project inwardly toward the central axis; twelve curved engagement surfaces that respectively connect the flat surface of each pair at the inner extremity of its pointed shape; each curved engagement surface having opposite ends that are respectively tangent with the associated pair of flat surfaces; the curved engagement surfaces engaging the conventionally toleranced hexagonal fastener without any engagement of the hexagonal fastener by the flat surfaces; and connecting surfaces that connect the twelve pairs of flat surfaces with each other.

COLVIN PATENT

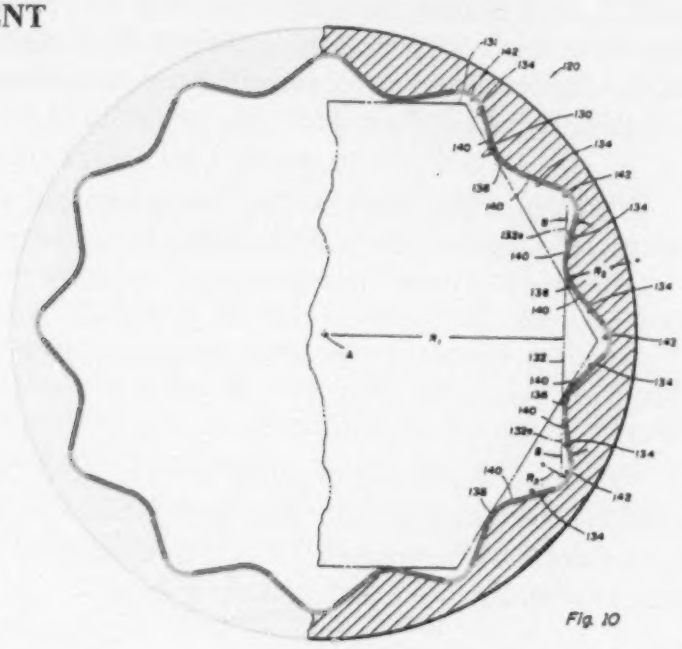

Fig. 10

DOSSIER PATENT

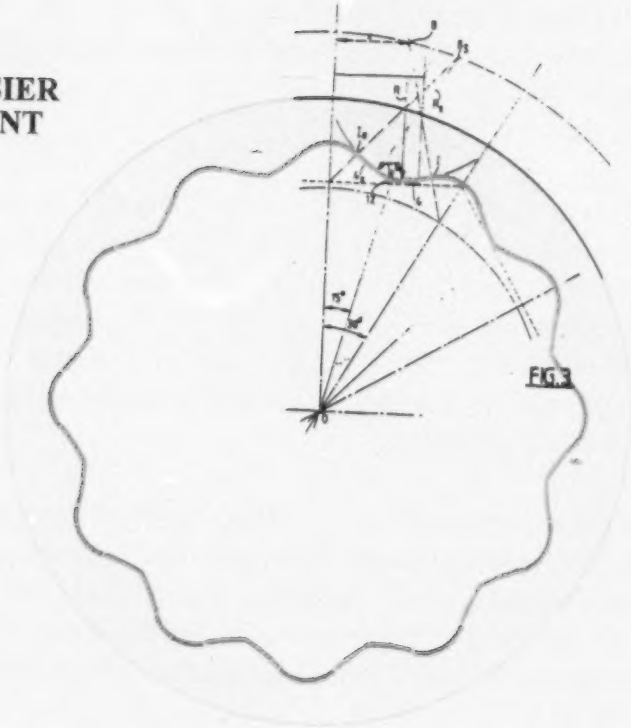

FIG. 3

and the Federal Circuit, and indeed submitted declaration testimony directed to these differences. However, both the Federal Circuit and the district court ignored these differences in direct violation of *Graham*.

Graham further requires that "circumstances surrounding the origin of the subject matter sought to be patented" should be considered. These "circumstances" include "commercial success, long felt but unsolved needs, failure of others, etc.," *Graham*, 383 U.S. at 17, and "copying," *Panduit*, 810 F.2d at 1566.

Petitioner submitted evidence of "long felt but unsolved needs": at the time Petitioner filed the application for his patent, Respondents were convening a special committee to solve the corner rounding problem Petitioner solved.

Petitioner provided evidence of "failure of others": although Respondents had every incentive to adopt Petitioner's "obvious" solution, they in fact tried their own, unsuccessful, design first.

Petitioner submitted extraordinarily overwhelming evidence of "commercial success" of the allegedly "obvious" invention: Respondents eventually changed to a design identical to that shown in the Colvin patent, and Respondents' counsel admitted during oral argument at the Federal Circuit that Respondents are making one million wrenches per day with the patented design.

This evidence of "circumstances surrounding the origin of the subject matter sought to be patented" is so overwhelming that the Federal Circuit and district court could find obviousness only by ignoring it. This again violates this Court's mandate in *Graham*, and deprived Petitioner his Seventh Amendment right

to a jury trial on the *Graham* "basic factual inquiries." The violation is especially troubling because the district court and Federal Circuit based their obviousness decisions on the Dossier patent that the U.S. Patent and Trademark Office considered before allowing Petitioner's patent.

CONCLUSION

The district court summarily invalidated, *sua sponte*, Petitioner's patent claims as obvious, and the Federal Circuit affirmed in a two paragraph opinion. Petitioner asks this Court to grant certiorari to ensure that the "several basic factual inquiries" mandated by *Graham*, which will arise in nearly every patent case, are properly adjudicated in accordance with the Seventh Amendment and *Graham*.

Respectfully submitted,

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APPENDIX

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DATED AND DECIDED AUGUST 18, 1998

United States Court of Appeals for the Federal Circuit

98-1104

DAVID S. COLVIN,

Plaintiff-Appellant,

NATIONAL AUTOMOTIVE PARTS ASSOCIATION, DANAHER CORPORATION, HOLO-KROME TECHNOLOGY CORPORATION, MATCO TOOLS TECHNOLOGY CORPORATION, and EASCO HAND TOOLS, INC.,

Defendants-Appellees,

DECIDED: August 18, 1998

Before RICH, NEWMAN, and PLAGER, *Circuit Judges*.

PLAGER, *Circuit Judge*.

Obviousness is a question of law based on underlying determinations of fact. *See Richardson-Vicks Inc. v. Upjohn, Co.*, 122 F.3d, 1476, 1479, 44 USPQ2d 1181, 1183 (Fed. Cir. 1997). Though on appeal we review a trial court's obviousness determination anew, *see Gardner v. TEC Sys., Inc.*, 725 F.2d 1338, 1344, 220 USPQ 777, 782 (Fed. Cir. 1984) (in banc), we consider with care the views expressed by the trial judge.

In this case, the trial court, on remand regarding the question of invalidity, held a hearing and gave both parties full

opportunity to present their evidence and argument on the question. In a well-considered opinion, the trial court, after taking into account the several considerations urged by the parties, including the prior art, commercial success, long felt but unsolved needs, and the failure of others to solve them, came to the conclusion that one of skill in the relevant art would have found the claimed invention obvious. *See Colvin v. National Auto Parts Ass'n*, No. 93-CV-71830 (E.D. Mich. Oct. 28, 1997). Summary judgment was granted in defendant's favor. We have reviewed the record presented, and arrive at the same conclusion. Accordingly, the judgment of the trial court is *affirmed*.

APPENDIX B — ORDER OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF MICHIGAN, SOUTHERN DIVISION DATED OCTOBER 28, 1997 AND FILED OCTOBER 28, 1997

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

Case No. 93-CV-71830
Hon. Robert E. DeMascio

DAVID S. COLVIN,

Plaintiff,

vs.

NATIONAL AUTOMOTIVE PARTS ASSOCIATION, DANAHER CORPORATION, HOLO-KROME TECHNOLOGY CORPORATION MATCO TOOLS TECHNOLOGY CORPORATION, and EASCO HAND TOOLS, INC.,

Defendants.

ORDER

This matter is before the court on remand from the United States Court of Appeals for the Federal Circuit with instructions "to reopen the case for further proceedings." Specifically, the federal circuit instructed this court to afford the parties an opportunity to argue the merits of this court's reliance on the Dossier/Facom '957 patent and fully develop the record on the issue of obviousness. To this end, the court provided the parties with an opportunity to brief and orally argue this issue.

Appendix B

A patent may be invalid for obviousness pursuant to 35 U.S.C. § 103, which provides:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

"[A] district court can properly grant, as a matter of law, a motion for summary judgment on patent invalidity when the factual inquiries into obviousness present no genuine issue of material facts." *Ryko Manufacturing Co. v. Nu-Star, Inc.*, 950 F.2d 714, 716 (Fed. Cir. 1991). "Since the facts to support a conclusion of invalidity of an issued patent must be proved by clear and convincing evidence, this standard must be applied by the court in deciding whether requirements have been met for summary determination of obviousness." *Id.* at 716.

"When analyzing a patent claim for obviousness, the claim should be considered as a whole, but the differences between the claim and the prior art need to be identified to place the obviousness analysis into proper perspective." *Id.* at 717. For an "invention to have been obvious, the prior art must suggest the desirability of making the claimed invention." *Id.* at 718.

In *Graham v. Deere*, 383 U.S. 1 (1966) the Supreme Court outlined the proper application of § 103 as follows:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior

> art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art involved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Id. at 17.

Both parties agree that the following claims are at issue: Claims 1, 2, 3 and 8 (relating to 6 point wrenches) and Claims 18, 19, 20 and 25 (relating to 12 point wrenches). Only Claims 1 and 18 are independent, the rest are dependent. However, the court must examine all claims for obviousness. 35 U.S.C. § 282; *Ortho Pharmaceutical Corp. v. Smith*, 959 F.2d 936, 942 (Fed. Cir. 1992). Claim 1 of the Colvin '378 patent describes a 6-point wrench:

> A wrench . . . comprising: six flat surfaces . . . in a generally hexagonal shape; six pairs of second flat surfaces . . . located [on either side of] the six circumferentially extending first flat surfaces . . . ; six pairs of curved engagement surfaces . . . connecting . . . the first flat surfaces and the pair of second flat surfaces. . . ; the curved engagement surfaces engaging the fastener without any engagement of the . . . fastener by the first and second flat surfaces.

Claim 2 describes:

> A wrench as in claim 1 whose wrench opening has a radius R1 between the central axis and midpoints of the six circumferentially extending first flat

> surfaces, the curved engagement surfaces having a radius R2, and the radius R2 being less than 2.6 R1. C

Claim 3 describes:

> A wrench as in claim 2 wherein the radius R2 is in the range of about 0.2 R1 to 1.0 R1.

Claim 8 describes:

> A wrench as in claim 7 wherein the wrench opening has said acute angle is provides with size in the range of about 3 degrees to 9 degrees.

(Pl's Appendix, Ex. 8).

Claim 18 describes a 12-point wrench:

> A wrench . . . comprising: twelve pairs of flat surfaces having pointed shapes that project inwardly toward the central axis; twelve curved engagement surfaces that respectively connect the flat surface of each pair at the inner extremity of its pointed shape . . . ; the curved engagement surfaces engaging the . . . fastener without any engagement of the . . . fastener by the flat surfaces.

Claim 19 describes:

> A wrench as in claim 18 whose wrench opening has a radius R1 between the central axis and midpoints of tangents between adjacent curved engagement

> surfaces, the curved engagement surfaces having a radius r2, and the radius R2 being less than 2.6 R1.

Claim 20 describes:

> A wrench opening as in claim 19 wherein the radius R2 is in the range of about 0.2 R1 to 1.0 R1.

Claim 25 describes:

> a wrench as in claim 24 wherein the wrench opening said acute angle provided in the range of about 3 degrees to 9 degrees.

(Pl's Appendix, Ex. 9).

As clearly stated during oral argument, Colvin asserts that the distinguishing characteristic of his wrench design lies in the fact that his '378 wrenches do not engage the corners of the nut. That is, Colvin's design supposedly is the only wrench that successfully protects the corners of the nut. (Transcript, May 9, 1997 at page 21).[1] We therefore begin our analysis of obviousness with this principle in mind.

The first part of the *Graham* test requires an examination of the scope and content of the prior art. We initially note that the prior art cited by both parties reflects an overly crowded field and a long-term industry-wide awareness of the problem of the rounding of the corners of nuts and bolts.

The prior art includes both six and twelve point wrenches driving the nut with flats and curves. The prior art submitted

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1. Of course, plaintiff has not produced a preponderance of evidence to support this contention other than plaintiff's own opinion.

for our study includes wrench geometries with curved and flat driving surfaces that are designed to avoid contact with the corners of the nut. Kavalar '910 depicts a 12-point wrench with a curved driving surface that is designed to contact the nut at a "space from the corner thereof," and the "member-engaging surfaces" are described as "cylindrical **lobes**." Figure 3 to the British '839 patent granted in 1962, is a 12-point design using a curved surface to drive a nut "at locations other than the points formed by the intersections of the wrenching flats of nuts and bolts." The intermediate flat surfaces and flank flat surfaces shown in Knudsen/Snap-On '430, claims a design to " 'avoid contact' with the sharp corners of the complemental geometrical fasteners." Unlike Colvin, the Knudsen '430 drives the nut with flat surfaces of the wrench similar to the Tien '594 and French '360 patents. The Hinkle '775 wrench, patented in 1966, is very suggestive of the patent in suit. It was designed to provide "clearance areas for said nut corners," with engagement under torque "near but not on, the corners of the nuts." The "point of intersection" is placed at the same position as the patent in suit. The "curved engagement surface" is referred to as an apex, and does not appear to be rounded. The Japanese '776 socket, a 1980 design, used a contiguous curve — a "gentle convex shape" to drive the nut. The arc of each side of the wrench is depicted contacting the nut very near, but not quite at, the corner of the nut.

We did rely as well upon the Dossier-Facom Patent '360 in finding that Colvin's patent was invalid for obviousness, but not exclusively, as plaintiff seems to have contended. The full text of Dossier is now in the record. Dossier states that it teaches a 6 or 12 point wrench "comprising grooves at place of said angles [6 or 12] for the purpose of clearing the edge of the nut or bolt between the body to be driven, these grooves being

located between bearing surfaces adapted to come into contact with the flat surfaces of said body for transmitting the tightening or untightening torque." (Dossier, Column 1, lines 25-30) Dossier uses a continuous curve to drive the nut and clear the corners of the nut. The curve used to clear the nut (prevent contract with the corner of the nut and the wrench), is depicted as Groove 3 in the diagram. Dossier states that groove 3, "which may have a different shape other than that shown provided it constitutes a sufficiently deep cavity for always clearing the edge of the nut or bolt object to be tightened." (Dossier, Column 3, lines 4-7) Dossier also teaches that the dimension of groove 3 is derived from a complex formula.

We again find that there is nothing new in Colvin's design for his 6 or 12 point wrench that was not taught by Dossier or the other prior art. While Dossier teaches a continuous curve for the geometry of the groove (the area designed to avoid contact between the wrench and the corner of the fastener during torque), the specification expressly teaches that the groove "may have a shape other than that shown provided it constitutes a sufficiently deep cavity for always clearing the edge of the nut or bolt object to be tightened." Accordingly, Dossier teaches that the shape of the surface attached to the outer end of the curved engagement surface may contain flats, as it is in Colvin, so long as it provides sufficient clearance to avoid contact with the corner of the nut. As we stated in our prior Order, Colvin's patent is distinct from Dossier/Facom only in that "Dossier/ Facom does not expressly claim that the contact occurs *only* at the convex or curved bearing surface. Colvin's design is distinct from designs that use only a curve to drive the nut, only in that Colvin has claimed a curve bounded by straight lines, rather than a gentle, unbroken, arc." (July 5, 1995 Order at p. 16) Indeed, Colvin's design merely flattens out the ends of the

curved groove depicted in Dossier's Fig. 1. This slight departure did not take Colvin's design outside Dossier's teaching that the groove could be of *any* shape as long as it provided clearance of the corner of the nut during torque.

Colvin also asserted during oral argument that his design drives on a curve which is bounded by two flats, and argues that these "second flat surfaces" somehow make his design unique. However, because clearance of the nut or fastener can readily be achieved by flats and/or curves, as was well-known in the art, there is nothing novel about the "second flat surfaces" in the Colvin patent. Indeed, the prior art provides examples of flat surfaces attached to the outer ends of the engagement surfaces, and extended to form recessed corner grooves. Hinkle '775, Knudsen '485 and '430 show flank flat surfaces connecting to a curve to complete the shape of the corner. Japanese '661 and Tien '594 show the corner shape completed by another flat. In any event, Colvin's patent makes no claim regarding these flat surfaces.

Colvin's dependent claims are also taught in the prior art. Because the claims for the 12 sided wrench are the same as those for the 6 sided wrench, the claims are discussed together. Claims 2 and 19 involve the specifications for the radius of the curved engagement surface. Namely, a radius R2 of the curved engagement surface that is less than 2.6 times the radius R1. Figure 1 of Dossier teaches this relationship; radius R in Dossier correlates to Colvin's R2, Dossier's radius P-M, which is also less than R, correlates to Colvin's R1. Claims 3 and 20 also relate to radius dimensions, which are taught in Figure 1 of Dossier, with the same radius correlations as indicated above. Claims 8 and 25 involve a relief angle of between 3 and 9 degrees. Hinkle '775 teaches a relief angle of 6 and one-half degrees.

Appendix B

Regarding the level of skill in the relevant art, the court has found that "Colvin has made no assertions of fact, however, he sets forth that he is a 'graduate engineer.' (July 5, 1995 Order at P. 16-17).[2] Danaher's 'flank design' committee was

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2. During oral argument following remand, counsel for Colvin volunteered that "so you understand, our appeal brief addressed errors we thought you made in your opinion, about level of skill in the argument [sic] . Dave Colvin is not a graduate engineer." (Transcript May 9, 1997 at p. 5) It was clear to us that we made that finding from either the briefs, affidavits and depositions filed by the parties and did not use the phrase "self-described 'graduate engineer' " in a demeaning manner. Counsel for Colvin could have been forthright and directed the Court to the discovery material which addressed Mr. Colvin's background. As it was, we spent numerous hours searching the voluminous file to determine whether our finding was indeed supported by the record.

First, in Exhibit 1 attached to "Plaintiff's Brief in Opposition to Defendant's Motion for Summary Judgment of Non-Infringement or Invalidity," plaintiff's answer to Interrogatory No. 51, inquires about a statement in Colvin's patent regarding line contact and stress on the fastener. Defendants asked plaintiff to "state all persons with knowledge of such facts." The Supplemental Response to Interrogatory 51 provides that "Mr. David S. Colvin would have information about such facts, as well as any **other** graduate engineer whose curriculum included **a basic course in mechanical engineering**." (Exhibit 1 to plaintiff's brief in opposition, entitled "Plaintiff's Supplemental Responses to Interrogatories and Requests for Admission" at p. 25, emphasis added) Mr. Colvin acknowledges the truth and accuracy of this response under penalty of perjury.

Further, in a pleading entitled "Declaration of David S. Colvin Submitted in Opposition to Defendants' Motion for Summary Judgment of Non-Infringement or Invalidity," Mr. Colvin states:

> I am experienced in the design, testing, and manufacture of hand tools, including socket and closed-end wrenches

(Cont'd)

composed of engineers with significant experience and education. The level of skill in the relevant art may properly be determined by reference to "factors such as educational level of the inventor, educational level of those who work in the industry . . . . and the sophistication of technology involved". *Ryko*, 950 F.2d at 718. Thus, the level of skill in the field contemplates some engineering background **or equivalent training**. Accordingly, in our July 5, 1995 Order, we set the level of skill as that "of an engineer with a Bachelor's degree,"

(Cont'd)

> of the type disclosed and claimed in U.S. Patent number 4,930,378. In the course my work in the hand tool field, I have become knowledgeable of industry standards applicable to hand tools and fasteners, including ANSI, SAE, and automotive OEM standards for wrenches and hexagonal fasteners. I am the inventor on numerous patents covering inventions in the hand tool field, and have in the past licensed defendant Easco Hand Tools, Inc. for its production of the "Sears Best" rachet drive.

Again, Mr. Colvin executed a declaration as to the accuracy of the information.

More notable is the fact that throughout all of the discovery filed, Mr. Colvin acted and talked like an engineer and commented on, or criticized assertions made by engineers for the defendant. Based upon these and other statements found in the materials submitted, we adhere to our conclusion that Mr. Colvin's level of skill is indeed that of "a graduate engineer." As a matter of fact, in the field of small hand tools, we think his level exceeds that of an engineer with a bachelor's degree, or "whose curriculum included a basic course in mechanical engineering," even though Mr. Colvin did not earn such a degree. Notwithstanding counsel's comment, we again find that the proper level of skill in the entire field "is that of an engineer with a Bachelor's degree." (July 5, 1995 Order at p.17).

a position to which we still adhere. (July 5, 1995 Order at p. 17).

Considerations of commercial success, long felt but unsolved needs, and the failure of others to invent complete the obviousness inquiry. *Id.* at 719. Colvin again argues that defendants' copying of his design supports a finding that the secondary considerations indicate non-obviousness, a position that cuts against the fact that the field of wrench design is extremely crowded. Because, however, it appears that defendants have been successful with the disputed wrench design, this secondary consideration weighs in Colvin's favor. However, as is discussed above, the need for an off-the-corner wrench has been long felt and repeatedly solved. Colvin's design is but one of those solutions.

In sum, the level of skill in the relevant art and the nature of the prior art point in favor of finding obviousness. To one working in this field, the possibility of having the rounded corners of a wrench contact the nut at a point off-set from the corners, and continue as the sole point of contact throughout torquing is a well known concept, of which Colvin's design is but one variation. Having carefully re-examined the prior art and our findings and conclusions in the July 5, 1995 Order, we adhere to our prior conclusion that Colvin's patent is invalid for obviousness.

s/ Robert E. DeMascio
Robert E. DeMascio
United States District Judge

Dated: October 28, 1997

APPENDIX C — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DATED AND DECIDED MAY 22, 1996

United States Court of Appeals For the Federal Circuit

95-1461, -1473

DAVID S. COLVIN,

Plaintiff-Appellant,

v.

NATIONAL AUTOMOTIVE PARTS ASSOCIATION, DANAHER CORPORATION, HOLO-KROME TECHNOLOGY CORPORATION, MATCO TOOLS TECHNOLOGY CORPORATION, AND EASCO HAND TOOLS, INC.

Defendants/Cross-Appellants.

DECIDED: May 22, 1996

Before RICH, NEWMAN AND PLAGER, *Circuit Judges*.

PLAGER, *Circuit Judge*.

The District Court for the Eastern District of Michigan granted summary judgment of invalidity against certain of David S. Colvin's ("Colvin's") patent claims. ***Colvin v. National Automotive Parts Ass.***, Civil No. 93-CV-71830-DT (E.D. Mich. July 5, 1995). The district court's decision is *vacated* and *remanded*, with instructions to reopen the case for further proceedings consistent with this opinion.

Appendix C

DISCUSSION

Patents are presumed valid, 35 U.S.C. § 282, and a party who attacks a patent's validity must establish the specific grounds for the attack. In this case, defendants asserted invalidity under 35 U.S.C. §§ 102(b) and 103, relying on the "Moore wrenches" allegedly sold by defendants from 1984 through 1991. The lower court found this problematic because, *inter alia*, the alleged wrenches were evidenced by a drawing that was modified after Colvin's application was filed. The district court therefore denied summary judgment based on the Moore wrenches. However, the court then granted summary judgment of invalidity based on the Dossier/Facom '957 patent.

Because summary judgment was granted on grounds not asserted by the prevailing party, and the losing party did not have an opportunity to rebut the grounds, the court must give the patentee an opportunity to defend on the grounds the court wishes to consider. The Supreme Court has stated that "district courts are widely acknowledged to possess the power to enter summary judgments *sua sponte*, so long as the losing party was on notice that she had to come forward with all of her evidence." ***Celotex Corp. v. Catrett***, 477 U.S. 317, 326 (1986). In this case, the judgment below is difficult to review because this court does not have the benefit of the parties' arguments made there. This court does not even have the entire Dossier/Facom patent in the record, nor does it appear that the trial court had the full record before it. Furthermore, because Colvin was not given an opportunity below to address the trial court's concerns, this court finds it difficult to determine whether or not there are unresolved factual issues. We conclude that the most efficient disposition of this case is to remand it to the trial judge with instructions to reopen the case for further proceedings consistent with this opinion.

APPENDIX D — ORDER OF THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF MICHIGAN, SOUTHERN DIVISION DATED JULY 5, 1995 AND FILED JULY 5, 1995

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

Case No. 93-CV-71830-DT
Honorable Robert E. DeMascio

DAVID S. COLVIN,

Plaintiff,

v.

NATIONAL AUTOMOTIVE PARTS ASSOCIATION, et al.,

Defendants.

ORDER

This dispute is before the court on cross motions for summary judgment. A hearing on the pending dispositive motions was held on March 17, 1995, at which time the court allowed the filing of all supplemental evidence other than the testimony of Alan R. Leewood.[1] The court also set a briefing

1. Plaintiff's argument that he would be prejudiced by consideration of defendants' supplemental evidence because he would have to engage in further discovery is not convincing. The parties agreed in a telephone conference held on November 18, 1994 and memorialized by an order (Cont'd)

schedule as to the issues of infringement of claims 16 and 17 of the patent in suit and of the doctrine of equivalents. Briefing on those issues is now complete. Therefore, the case is ripe for resolution.

Plaintiff, David S. Colvin, a self-described "graduate engineer" filed his application for what eventually became the '378 patent on April 22, 1988. Claim 1 of the Colvin '378 patent describes a 6-point wrench:

> A wrench . . . comprising: six flat surfaces . . . in a generally hexagonal shape; six pairs of second flat surfaces . . . located [on either side of] the six circumferentially extending first flat surfaces . . . ; six pairs of curved engagement surfaces . . . connecting . . . the first flat surfaces and the pair of second flat surfaces. . . ; the curved engagement surfaces engaging the fastener without any engagement of the . . . fastener by the first and second flat surfaces

Claim 16 also describes a 6-point wrench:

> A socket wrench comprising: . . . six pairs of (sic) first flat surfaces . . . six pairs of second flat surfaces

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(Cont'd)
dated November 29, 1994, to permit discovery regarding then ongoing tests. At that time, the court ordered discovery period was closed. The documents now challenged were filed on December 15, 1994. Plaintiff's cry of foul rang out on December 23, 1994, less than a month after the order regarding consensual post-discovery discovery. Further, both parties have engaged in post-discovery research and analysis. Plaintiff was no more punctual than defendants in exploring the contours of this case. The no doubt costly protraction of the litigation and discovery is thus not the fault of only one party, but is the fault of both.

> respectively located adjacent the six circumferentially extending first flat surfaces . . . six pairs of curved engagement surfaces respectively associated with the six . . . first flat surfaces . . . the curved engagement surfaces having an increasing curvature in a direction from the open driving end of the wrench body toward the driven end of the body and engaging the . . . fastener without any engagement of the . . . fastener by the first and second flat surfaces

Claim 17 describes a "closed-end wrench", again with six points:

> [I]ncluding six first flat surfaces. . . six pairs of second flat surfaces respectively located adjacent the six . . . first flat surfaces . . . six pairs of curved engagement surfaces . . . the curved engagement surfaces having an increasing curvature in a direction from each axial end of the body toward the other and engaging the . . . fastener without any engagement of the . . . fastener by the first and second flat surfaces

Claim 18 describes a 12-point wrench:

> A wrench . . . comprising: twelve pairs of flat surfaces having pointed shapes that project inwardly toward the central axis; twelve curved engagement surfaces that respectively connect the flat surface of each pair at the inner extremity of its pointed shape . . .; the curved engagement surfaces engaging the . . . fastener without any engagement of the . . . fastener by the flat surfaces

Appendix D

Colvin originally asserted that defendants were infringing "at least claims 1 and 18". His supplemental response to Interrogatory 24 listed claims 1-5, 7-9, 11, 13, 16-22, 24-26, 28 & 30. "It is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed." *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989). Only claims 16, 17, and 18 are independent claims. Thus, absent infringement of claims 1, 16, 17, and 18, defendants are entitled to judgment.

In asserting infringement of claims 16 and 17, plaintiff offers a theoretical discussion of how the finishing process of the accused socket wrenches inherently creates the curvature characteristics described in claims 16 and 17. He offers, however, no affidavit, deposition, physical or other evidence that the accused wrenches are curved as described in claims 16 and 17. Plaintiff was put on notice at the hearing that the issue of infringement of these claims was before the court on defendants' motion for summary judgment. Further, defendants point out in their response that plaintiff has offered no evidence that the accused wrenches are shaped as described. Where a plaintiff has been put on notice that the existence of evidence to support his case is at issue, he must go beyond the pleadings and by affidavit, or by other evidence, designate specific facts showing that there is a genuine issue for trial. *Celotex Corp. v. Catrett*, 477 U.S. 317, 324 (1986). Plaintiff has failed to submit necessary evidence. Therefore, a finding of non-infringement as to claims 16 and 17 will be entered.

The issue of infringement of claims 1 and 18 must be addressed in more detail. On March 15, 1994, this court entered an order denying plaintiff's motion for partial summary

judgment of literal infringement. Both plaintiff and defendants rely on that order as establishing the proper interpretation of plaintiff's patent number 4,930,378 (the '378 patent). A determination of infringement is a two step process. The court must first interpret the asserted patent claims, then compare the properly interpreted claims with the accused device. *Graver-Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605 (1950); *Carroll Touch, Inc v. Electro Mechanical Sys.*, 15 F.3d 1573, 1576 (Fed. Cir. 1993). The parties have relied on this court's interpretation of the asserted patent claims, to wit:

> Colvin's claims . . . require that throughout proper use, the nut be engaged by the curved surfaces of the wrench without any engagement of the nut by the flat surfaces of the wrench.

Order of March 15, 1994 at 8.

Thus, the parties have examined defendants' product to determine whether the flat surfaces of the wrench engage the nut during proper use. By focusing their scientific analyses and arguments on alleged flat-to-flat contact, while merely noting disagreement as to the requirement that there be a curve, the parties have neatly side-stepped the unresolved question of what exactly constitutes a 'curved' surface. Defendants contend that the area they term an 'intersection' is not a curve — at least in a microscopic sense. Taken on a sufficiently microscopic level it seems that any putative curve could be seen as a combination of nearly straight, irregular, or jagged lines. In practical terms, it appears that defendants' wrenches will often contain curves at the 'intersections'. For this reason, the accused product should be found to incorporate a curve, whether or not it is designed to do so and whether or not all exemplars of the product would have curves at the relevant 'intersections'.

Appendix D

Both plaintiff and defendants have submitted computer generated finite element analyses (FEAs) and supporting expert testimony. Each expert further attacks the assumptions underlying the opposing FEA. Defendants' FEAs were produced at the direction of Michael L. Ernst, an engineer who has designed wrenches and who has participated in framing industry standards for the performance of wrenches. Ernst had the FEAs conducted by AC Engineering, an outside firm headed by Alan R. Leewood. AC Engineering used a modelling program called ABAQUS. Plaintiff's FEA was produced at the direction of its expert, Professor Harold Josephs. Josephs had the FEAs conducted by Modern Engineering, another outside firm. Modern used a program called NASTRAN. Both parties attack admissibility of testimony regarding the other party's FEA. The issue of admissibility of various testimony must be resolved in order to properly resolve the pending dispositive motions.

The court rejected Leewood's testimony because defendants failed to file a motion for leave to add Leewood as an expert witness. Further, this court in an order dated March 22, 1994, limited both parties to two liability experts. Finally, Leewood was not timely identified. It appears that Leewood's testimony so far submitted is neither truly needed nor persuasive. He has offered opinions consistent with those of defendants' other experts and submitted an unsupported opinion as to the reliability of competing modelling programs. It is true that he would be competent to testify as to the nuts and bolts of the production of defendants' FEA, the technical information as to assignment of data points in the program, and the formulae relating to surface friction. That information would inevitably have to be filtered through either his or another's expert analysis in order for it to become meaningful to a trier of fact. In other words, some expert will be needed to testify as to the realism

of the physical assumptions made in the course of the analysis. Since an expert, unlike other witnesses, may rely on second hand information, *see* Fed. R. Evid. Rules 702 and 703, there appears to be no reason that Ernst could not fully address the necessary issues of admissibility.

A similar analysis resolves defendants' challenge to Josephs' testimony. Even though Josephs cannot testify as to the nuts and bolts of the production of the FEA, his testimony is sufficient to establish admissibility. Defendants' Rule 104[2] challenge to Prof. Josephs' testimony as to the FEA depends on the Supreme Court's reasoning in *Daubert v. Merrell Dow Pharmaceuticals*, __ U.S. __, 125 L.Ed.2d 469, 1993 U.S. LEXIS 4408 (1993). The court explained that:

> Unlike an ordinary witness, see Rule 701, an expert is permitted wide latitude to offer opinions, including those that are not based on first-hand knowledge or observation. See Rules 702 and 703. Presumably, this relaxation of the usual requirement of first-hand knowledge . . . is premised on an assumption that the expert's opinion will have a reliable basis in the knowledge and experience of his discipline.

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2. Rule 104(a) provides:

> "Preliminary questions concerning the qualification of a person to be a witness, the existence of a privilege, or the admissibility of evidence shall be determined by the court, subject to the provisions of subdivision (b) [pertaining to conditional admissions]. In making its determination it is not bound by the rules of evidence except those with respect to privileges."

Appendix D

> Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset, pursuant to Rule 104(a), whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. This entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue. . . . Many factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test. But some general observations are appropriate.

Daubert, 125 L.Ed.2d at 482 (footnotes omitted). The court listed as relevant: 1) whether a theory or technique "can be (and has been) tested"; 2) "whether the theory or technique has been subjected to peer review and publication"; 3) "the known or potential rate of error"; and 4) 'general acceptance' within a relevant scientific community. *Id.* at 483. "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Id.* at 484. Under *Daubert* and the Rules of Evidence, it is the court's task to ensure that expert "testimony both rests on a reliable foundation and is relevant to the task at hand." *Id.* at 485.

In this case, defendants argue that Josephs can not provide a proper scientific basis for admission of plaintiff's FEA. However, it is clear that neither party argues that a computer model, or FEA, is an invalid methodology. Further, Josephs'

deposition testimony presented significant proof of admissibility. Josephs' qualifications to teach and evaluate computer modeling of physical events were established, as was his experience with the technology at issue during its development. While he testified that he did not himself produce plaintiff's FEA, he testified as to the reliability of FEAs in general, the use to which they are put in industry, and the reputation of the company that produced plaintiff's FEA. Further, he testified that he maintained a proper distance from the test in an effort not to influence the results. Finally, he provided the data on which the FEA was based. He specifically testified that the dimensions of the wrench were accurately provided. The nut was not presumed to be rigid, but was instead presumed to be of a specified hardness of steel which was allowed to warp under pressure.[3] It is clear to a preponderance of the proof, *see Bourjaily v. United States*, 483 U.S. 171, 175-176, 97 L. Ed. 2d 144, 107 S. Ct. 2775 (1987), that the proffered scientific models of both plaintiff and defendants represent scientific knowledge that will help the trier of fact determine how the accused wrench functions.

Further, both plaintiff and defendants have submitted evidence supporting their opposing contentions as to how the accused wrench functions. Defendants' evidence of flat to flat contact includes a permissible inference drawn from defendants' FEA studies that where there is stress shown at the surface of the wrench, there is contact. Plaintiffs have submitted expert testimony and argument attacking the levels of torque depicted, the accuracy of the location of the 'intersection point'

3. Defendants' expert may, of course, testify that to his knowledge the warping shown in the challenged FEA is unrealistically minimal or practically non-existent. This goes to the weight accorded the FEA rather than to the admissibility of it.

or alleged 'curve', and the use of the "contact stress" to show contact.

As to level of torque, even at 2097 in.-lbs., which is lower than the failure level cited by plaintiff (3420 in.-lbs), the area of stress shown in defendant's FEA was more than twice the width of the 'intersection' as identified by defendants. Therefore the defendants need not rely on their results at a maximum level of torque to support their conclusions.

Because "contact stress" includes any internal stress caused by contact, it clearly goes beyond the actual area of contact to adjacent areas. Thus, defendants' FEAs include graphical representations of 'contact' extending into the nut and quite possibly to either side of the actual contact. For these reasons, defendants' FEAs constitute evidence of flat to flat contact, but not irrefutable evidence of such contact.

Defendants have also submitted a conduction study described by Ernst and depicted in Exhibit 13 to the Appendix to Defendants' Motion for Summary Judgment of Non-Infringement and Invalidity (Defs.' App. Ex. 13). That evidence, too, is subject to some doubt. It is not reassuring that the second photograph in Defs.' App. Ex. 13 apparently shows the test light lit when it touches the insulated portion of the wrench. This would indicate that current travelled through the insulation. If so, the insulation was insufficient to its task. In addition, while Ernst had directed how the exhibit was to be constructed, he had not checked the accuracy of the dimensions of the 'mock-up' nor could he address the propriety of the amount of torque used.

The videotaped tests submitted by defendants are flawed primarily in that the details described by defendants' witnesses,

such as marring of the surfaces of the wrench used to drive the bolt, are not visible in most of the examples. The marred wrenches or sockets were reportedly preserved, but have not been submitted to the court. This evidence, too, is not conclusive.

Plaintiff's evidence, particularly plaintiff's FEA, contributes to and does not resolve this issue of fact.[4] Plaintiff's reliance on sales demonstration models is again reliance on a model, not on a test of a physical embodiment of the accused design. Plaintiff has, further, made much of the argument that location of the stress on an object is not necessarily indicative of the point of physical contact. Thus, the stresses shown in the photographs must be interpreted by an expert as to the points of contact they reflect.

It is thus apparent that neither party is entitled to judgment as to the alleged infringement of claims 1 and 18.[5] We therefore turn to defendants' argument that even if their wrenches infringe the Colvin patent, they are entitled to manufacture them because claims 1 and 18 of Colvin's patent are invalid. Defendants cite

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4. Colvin's arguments based on "SAE Aerospace Standard 954E" are unavailing. A wrench that transmits torque to a fastener without bearing on the outer 5% of its corners may or may not do so by means of flat to flat contact.

5. Having found that there is an issue of fact as to literal infringement, it is not necessary for the court to resolve the issue of infringement by application of the doctrine of equivalents. Nonetheless, we would hold that plaintiff is not entitled to the range of equivalents he seeks. The prior art is so crowded that any equivalent plaintiff could claim would read on one or more prior patent. *Wilson Sporting Goods v. David Geoffrey & Assoc.*, 904 F.2d 677, 685 (Fed Cir.), *cert denied*, 498 U.S. 992 (1990).

both 35 U.S.C. § 102(b), the test for novelty, and § 103, the test for non-obviousness, in support of this argument.

Under 35 U.S.C. § 102(b), a person is entitled to a patent, unless:

> [T]he invention was patented or described in a printed publication in this or a foreign country or in public use or sale in this country, more than one year prior to the date of the application for patent in the United States.

In order to invalidate a patent under the 'on sale' provision of § 102(b), the party asserting invalidity must demonstrate by clear and convincing evidence:

> [A] definite sale or offer to sell more than one year before the application for the subject patent, and that the subject matter of the sale or offer to sell more than one year before the application for the subject patent and that the subject matter of the sale or offer to sell fully anticipated the claimed invention or would have rendered the claimed invention obvious by its addition to the prior art.

U.M.C. Electronics Co. v. United States, 816 F.2d 647, 656 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1025 (1988). "Whether a product was placed on sale under section 102(b) is a question of law". *Keystone Retaining Wall Sys. v. Westrock, Inc.*, 997 F.2d 1444, 1451 (Fed. Cir. 1993).

In asserting § 102(b), defendants rely on the Moore wrenches. This is problematical because the alleged wrenches

are evidenced by a drawing that was modified after Colvin's application was filed. Further, the existence of a punch design does not establish sales at any given time. Orders of duplicates of the punch are established in the record by the testimony of Eidenmiller and the Form Flow records (Defs.' App. Ex. 8).

An inference may be raised from the multiple punches ordered that a number of sockets were made with the punches described in TP-80452 from some time in 1984. That inference, however, is not definite evidence. Plaintiff has submitted Desmarais' testimony that the punches might properly be called 'experimental'. (Pl.'s Brief in Opp. Ex. 14). Defendants have not submitted clear and convincing evidence that the Moore wrench was on sale before April 22, 1987.

Given this failure of proof, the Moore wrench will not be treated as prior art in the ensuing analysis of obviousness under § 103.[6] "[A] district court can properly grant, as a matter of law, a motion for summary judgment on patent invalidity when the factual inquiries into obviousness present no genuine issue of material facts." *Ryko Manufacturing Co. v. Nu-Star, Inc.*, 950 F.2d 714, 716 (Fed. Cir. 1991). "Since the facts to support a conclusion of invalidity of an issued patent must be proved by clear and convincing evidence, this standard must be applied

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6. Under 35 U.S.C. § 103:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

by the court in deciding whether requirements have been met for summary determination of obviousness." *Id.* at 716.

The proper application of § 103 was authoritatively set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966):[7]

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Id. at 17.

In this case, the parties have assumed that the pertinent field of endeavor is the field of wrench and socket design. Further, the prior art designs before the court fall within this field. Like the Colvin design, the bulk of prior art designs were expressly intended to protect the corner of the nut from adverse effects of contact. As such, they are more than "reasonably pertinent to the particular problem to be solved", *Wang Lab., Inc. v. Toshiba Corp.*, 993 F.2d 858, 864 (Fed. Cir. 1993), and are clearly analogous art.

The prior art includes both six and twelve point wrenches. Some drive the nut with flats; others use curves. In some

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7. The relevant language defining obviousness, "i. e., whether 'the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.' § 103 of the Patent Act of 1952, 35 U.S.C. § 103 (1964 ed.)." has not changed since *Graham*, 383 U.S. at 3.

examples, the nut is driven solely by a curve (Fig. 1 to Kavalar '910, Defs.' App. Ex. 14, p. 2). In others, it is driven by a flat. (Claim 1 to Knudsen/Snap-On '430, Defs.' App. Ex. 14, p. 1). The prior art includes wrench geometries incorporating "intermediate flats" and "flanks" (Hinkle '775, Japan '661, Defs.' App. Ex. 14, p.3), which intuitively must be connected by either some 'point of intersection' or some curve. These designs very closely resemble the patent in suit.

Compellingly, defendants have cited Dossier/Facom '957, a patent granted on April 16, 1986, just over two years before Colvin's application was filed. Dossier/Facom described:

> A tool for driving screw-threaded nut or bolt objects, said tool defining an inner opening having an inscribed polygonal profile having at least six angles, said profile comprising grooves at the place of said angles for the purpose of clearing edges of the nut or bolt body to be driven, two bearing surfaces disposed on each side of each groove, said bearing surfaces being provided for coming into contact with flat surfaces of said body so as to transmit a tightening or untightening torque, *said bearing surfaces being convex in a direction toward the interior of said opening*

(Def.'s App. Ex. 14, p. 3, emphasis added) Further, the patent took into account the "radius of curvature, at the contact, of the profile of the bearing surface."

The only available distinction between the patent in suit and Dossier/Facom is that Dossier/Facom does not expressly claim that the contact occurs *only* at the convex or curved

bearing surface. Colvin is distinct from designs that use only a curve to drive the nut only in that Colvin has claimed a curve bounded by straight lines, rather than a gentle, unbroken, arc.

This established difference between the prior art and the claimed invention must be viewed against the level of skill in the relevant art. On this point, Colvin has made no assertions of fact, however, he sets forth that he is a "graduate engineer". Danaher's 'flank design' committee was similarly composed of engineers with significant experience and education. The level of skill in the relevant art may properly be determined by reference to "factors such as educational level of the inventor, educational level of those who work in the industry . . . , and the sophistication of technology involved". *Ryko*, 950 F.2d at 718. At a minimum, the established level of education in the field is that of an engineer with a Bachelor's degree.

The Supreme Court has recognized that certain 'secondary considerations' such as "commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy." *John Deere*, 383 U.S. at 17.

Colvin argues that defendants' copying of his design supports a finding that the secondary considerations indicate nonobviousness. That argument runs contrary to the also established fact that this is a crowded field. Defendants were inevitably going to produce a wrench similar to a number of prior art designs. Although the issue of commercial success has not been specifically shown to favor either plaintiff or defendants, it appears that defendants have done well with the

disputed wrench design. For the purpose of this motion, then, commercial success will deemed to weigh in Colvin's favor.

It cannot, however, be said that there was a long felt but unsolved need. Colvin has merely offered one of many solutions to the problem of rounding of corners. The other patents and evidence, such as that of the commercial success of the "Snap-On" wrench, reflect numerous pre-existing solutions to the rounding problem. Even industry standards such as "SAE Aerospace Standard 954E", require that a "wrench transmits torque to the fastener without bearing on the outer 5% of the fastener[']s corners". In short, the problem addressed by the patent in suit has repeatedly been solved in the past. For the same reason, it cannot be said that others have failed to resolve this problem. This secondary consideration clearly weighs against Colvin.

As an additional consideration, the Federal Circuit has indicated that for an "invention to have been obvious, the prior art must suggest the desirability of making the claimed invention." *Ryko*, 950 F.2d at 718. In this case, Colvin stated that his invention was designed to solve the problem of flat to corner contact, which contact places undue stress on the corners of the fastener, deforms of the fastener, and lessens torquing ability. The prior art reflects a crowded field with a long-term industry-wide understanding of the desirability of avoiding contact with the corners of nuts and bolts. The vast majority of the prior art cited by the parties related to the turning of a bolt or nut. Further, as is reflected in British patent '431, granted in 1927, and French Patent 770360, granted in 1934, there is nothing new in the insight that the rounding of a 'junction' used as a driving surface may be 'convenient' or desirable.

Appendix D

Even construing the evidence in Colvin's favor, it is clear that Colvin's design as set forth in claims 1 and 18 was obvious. While one secondary consideration may be deemed as weighing in Colvin's favor, the other secondary considerations do not. The high level of skill in the relevant art and the crowded field weigh solidly in favor of defendants' argument that Colvin's invention was obvious. To an engineer working in this field, the desirability of achieving contact at a place offset from the corner of the nut was well established. In order to enter into the crowded field, it was further desirable to design a wrench that at least arguably was new and separately patentable. The possibility of using a curved driving surface with no flat to flat contact was established, as was the possibility of using a curve as the primary contact and driving surface. Colvin's modification of this well worn theme would have been obvious;

NOW, THEREFORE, IT IS ORDERED that defendants' motion for summary judgment is GRANTED;

Plaintiff's motion for summary judgment of infringement is DENIED;

Plaintiff's motion for leave to supplement the evidentiary record on plaintiff's renewed motion for summary judgment of infringement is GRANTED;

Defendants' motion for leave to supplement the evidentiary record on defendants' motion for summary judgment of non-infringement or invalidity and in opposition to plaintiff's renewed motion for summary judgment is GRANTED, however;

Defendants' request for leave to amend their expert witness list to add Alan R. Leewood is DENIED;

Appendix D

Defendants' motion for leave to file motion in limine to exclude evidence and for Rule 104 Hearing is GRANTED, however;

Defendants' motion in limine to exclude evidence and for Rule 104 Hearing is DENIED;

Plaintiff's Objection to Exhibits 7, 8, 10-3, and 18 of Appendix to Defendants' Brief in Support of Motion for Summary Judgment of Non-Infringement and Invalidity is OVERRULED;

Finally, motions for leave to file pleadings after March 17, 1995 are DENIED, the court having closed the record following oral arguments on that date.

s/ Robert E. DeMascio
Robert E. DeMascio
United States District Judge

Dated: JUL 05 1995

APPENDIX E — ORDER OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT DENYING PETITION FOR REHEARING DATED AND FILED SEPTEMBER 25, 1998

United States Court of Appeals for the Federal Circuit

ORDER

A combined petition for rehearing and suggestion for rehearing in banc having been filed by the APPELLANT, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the suggestion for rehearing in banc having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the suggestion for rehearing in banc be, and the same hereby is, DECLINED.

The mandate of the court will issue on October 2, 1998.

FOR THE COURT,

s/ Jan Horbaly
Jan Horbaly
Clerk

Dated: September 25, 1998

cc: Ernie L. Brooks
Philip L. Cohan

COLVIN V NATL AUTO PARTS ASSOC, 98-1104
(DCT - 93-CV-71830)